

F2 49. (Amended) A system as recited in claim 73, wherein said memory comprises a plurality of stored force feedback effects and said force feedback value comprises the sum of force contributions from said plurality of stored force feedback effects.

50. (Amended) A system as recited in claim 46, wherein said controller is further operable to utilize a plurality of pointers to determine the force feedback effect to contribute to said output force feedback value.

51. (Amended) A system as recited in claim 46, wherein said controller is further operable to: compute a manipulandum velocity from said position data; and incorporate said velocity in said determination of said force contribution.

Please amend claims 53 and 54 as follows:

73 53. (Amended) A system as recited in claim 46, further comprising a button coupled to said manipulandum and said controller.

54. (Amended) A device comprising:
a manipulandum having at least one degree of freedom;
an actuator coupled to said manipulandum;
a position sensor for determining a position of said manipulandum in said at least one degree of freedom; and
a controller coupled to said actuator and to said position sensor, wherein said controller is operable to:
determine at least one stored force feedback effect to contribute to output of said force feedback system, wherein said force feedback effect comprises a force feedback effect type and a magnitude.

Please amend claim 57 as follows:

F4 57. (Amended) A device as recited in claim 54, further comprising a gear transmission coupled between said manipulandum and said actuator, said gear transmission configured to transmit an output force from said actuator to said manipulandum.

✓ Please amend claims 60 and 61 as follows:

60. (Amended) A device as recited in claim 54, wherein said stored force feedback effect comprises at least one of a detent, a wall, and a spring.

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61. (Amended) A device as recited in claim 54, wherein said stored force feedback effect comprises an attribute, wherein said attribute comprises an attribute selected from group consisting of a stiffness attribute, a damping attribute, a force attribute, and a distance attribute.

Please amend claim 64 as follows:

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64. (Amended) A method as recited in claim 62, wherein said maximum peak force comprises about twice as great a magnitude as said nominal peak force.

Please amend claim 69 as follows:

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69. (Amended) A device as recited in claim 68, wherein said maximum peak force is output only during an initial movement of said manipulandum into an object simulated in the computer graphical simulation.

Please amend claim 72 as follows:

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72. (Amended) A device as recited in claim 68, wherein said manipulandum comprises a joystick.

✓ Please add new claims 73-76 as follows:

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73. (New) A system as recited in claim 46, wherein said controller is further operable to output a force feedback value based on said determined force contribution to said force feedback actuator.

74. (New) A system as recited in claim 46, wherein said controller is further operable to:
receive input information through a communication port of said controller and decodes commands from said input information,
read force values from said communication port, and

output data on said communication port, said output data including position data from said position sensor.

75. (New) A device as recited in claim 54, wherein said controller is further operable to output a force feedback value based on said determined force contribution to cause a force based on said force feedback value to be output by said actuator.

76. (New) A device as recited in claim 54, wherein said controller is further operable to:
receive input information through a communication port of said controller and decodes commands from said input information,
read force values from said communication port, and
output data on said communication port, said output data including position data from said position sensor.
